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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,496	01/30/2004	Ahmad A. J. Ali	016295.1522	8751
23640	7590	03/07/2007		
BAKER BOTTS, LLP 910 LOUISIANA HOUSTON, TX 77002-4995			EXAMINER CONTINO, PAUL F	
			ART UNIT 2114	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/769,496

Applicant(s)

ALI, AHMAD A. J.

Examiner

Paul Contino

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION: Final Rejection**

***Response to Arguments***

1. Applicant's arguments with respect to claims 1-36 have been considered but are moot in view of the new grounds of rejection.
2. The Examiner recommends including how the writing of information, including ECC, counter, and date information together assists in the repair of a storage device. The Examiner also recommends including how the method steps depend and/or are ordered with respect to one another.

***Specification***

3. The disclosure is objected to because of the following informalities: paragraph [0024] contains an open parenthesis in lines 1-2.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 10 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanabe (U.S. Patent No. 7,102,780).

As in claim 10, Watanabe discloses a method for media repair of a storage device, comprising:

performing a read operation on the storage device (*column 14 lines 38-43 and 56-58, and column 15 lines 3-4 and 24-26, where the storage device is RAM 42 with memory portions A,B,C*);

detecting a signature (*column 13 lines 54-64, where a device code is a signature being detected by apparatuses 1 through 5*); and

performing a write operation on the storage device, wherein the write operation is performed with counter and date information (*column 18 lines 39-48, where apparatus 7 writes counter information into memory A along with date and time information*).

As in claim 18, Watanabe discloses the storage device is a non-RAID configuration (*column 18 line 40, RAM 42*).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 6-9, 19, 20, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over George (U.S. Patent No. 6,993,679 B2) in view of Watanabe.

As in claim 1, George discloses a method for media repair of a storage device, comprising:

- performing a read operation on the storage device (*column 7 lines 24-54*);
- detecting a read error (*column 7 line 17*);
- locking a logical block address on the storage device (*column 4 lines 21-26 and column 10 lines 34-41, where inhibiting a read to an address is interpreted as locking the logical block address*);
- performing a reassign operation on the storage device (*column 4 lines 46-48 and 55-58*);
- performing a write operation on the storage device (*column 5 line 23*); and
- unlocking the logical block address (*column 4 lines 21-26 and column 10 lines 34-41, where allowing a read to an address is interpreted as unlocking the logical block address*).

However, George fails to teach of the write operation being performed with counter and date information. Watanabe teaches of a write operation with counter and date information (*Figs. 12 and 15; column 21 lines 25-47, where hard disk 105 stores the contents of information in Figure 15, which includes counter and date information*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included counter and date information with a write operation as taught by George in the invention of Watanabe et al. This would have been obvious because Watanabe enhances the reliability of the system of George by extending the fault tolerance to communication of data to storage, before the data reaches storage itself.

As in claims 2, 6, 7, 8, and 9, George teaches the storage device is a non-redundant RAID configuration/SCSI device/IDE device/ATA device/non-RAID configuration (*column 6 lines 3-19*).

As in claim 19, George teaches a method for media repair of a storage device, comprising:

performing a read operation on the storage device (*column 7 lines 24-54*);

locking a logical block address on the storage device (*column 4 lines 21-26 and column 10 lines 34-41, where inhibiting a read to an address is interpreted as locking the logical block address*);

performing a write operation on the storage device (*column 5 line 23*); and

unlocking the logical block address (*column 4 lines 21-26 and column 10 lines 34-41, where allowing a read to an address is interpreted as unlocking the logical block address*).

However, George fails to teach of the write operation being performed with counter and date information. Watanabe teaches of a write operation with counter and date information (*Figs. 12 and 15; column 21 lines 25-47, where hard disk 105 stores the contents of information in Figure 15, which includes counter and date information*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included counter and date information with a write operation as taught by George in the invention of Watanabe et al. This would have been obvious because Watanabe enhances the reliability of the system of George by extending the fault tolerance to communication of data to storage, before the data reaches storage itself.

As in claims 20, 24, 25, 26, and 27, George teaches the storage device is a non-redundant RAID configuration/SCSI device/IDE device/ATA device/non-RAID configuration (*column 6 lines 3-19*).

\* \* \*

6. Claims 3-5, 21-23, and 28-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over George in view of Watanabe, further in view of Williams et al. (U.S. PGPub 2001/0042230 A1).

As in claims 3-5 and 21-23, the combined invention of George and Watanabe teaches of read and write operations. However, the combined invention of George and Watanabe fails to teach of a read long, a write long, and producing invalid ECC data via a write long. Williams et al. teaches of a read long, a write long, and producing invalid ECC data via a write long (*paragraphs [0008], [0013], [0014], and [0056]*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included the operations as taught by Williams et al. in the combined invention of George and Watanabe. This would have been obvious because it is well-known in the art to use read/write long operations and corrupt ECC data in order to validate a storage device (*Williams et al.: paragraphs [0008] and [0009]*).

As in claim 28, George teaches a computer system comprising:

a storage device having storage media, the storage device constructed and arranged to perform a read operation (*column 7 lines 24-54*);

the storage device further constructed and arranged to detect a read error (*column 7 line 17*);

the storage device further constructed and arranged to lock a logical block address on the storage device (*column 4 lines 21-26 and column 10 lines 34-41, where inhibiting a read to an address is interpreted as locking the logical block address*);

the storage device further constructed and arranged to perform a reassign operation on the storage device (*column 4 lines 46-48 and 55-58*);



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the storage device further constructed and arranged to perform a write operation on the storage device (*column 5 line 23*); and

the storage device further constructed and arranged to unlock the logical block address (*column 4 lines 21-26 and column 10 lines 34-41, where allowing a read to an address is interpreted as unlocking the logical block address*); and

the storage device can detect errors in the storage media during the read operation (*column 7 lines 24-54*).

However, George fails to teach of a write operation being performed with counter and date information and writing invalid ECC data. Watanabe teaches of a write operation with counter and date information (*Figs. 12 and 15; column 21 lines 25-47, where hard disk 105 stores the contents of information in Figure 15, which includes counter and date information*). Williams et al. teaches the storage device can write invalid ECC data to prompt replacement of a portion of the storage media being read (*paragraph [0008]*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included counter and date information with a write operation as taught by George in the invention of Watanabe et al. This would have been obvious because Watanabe enhances the reliability of the system of George by extending the fault tolerance to communication of data to storage, before the data reaches storage itself.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the ECC as taught by Williams et al. in the combined invention of George and Watanabe. This would have been obvious because it is well-known in the art to use

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read/write long operations and corrupt ECC data in order to validate a storage device (*Williams et al.: paragraphs [0008] and [0009]*).

As in claims 29, 33, 34, 35, and 36, George teaches the storage device is a non-redundant RAID configuration/SCSI device/IDE device/ATA device/non-RAID configuration (*column 6 lines 3-19*).

As in claims 30, 31, and 32, Williams et al. teaches of a read long, a write long, and producing invalid ECC data via a write long (*paragraphs [0008], [0013], [0014], and [0056]*).

\* \* \*

7. Claims 10, 12-14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. in view of Watanabe.

As in claim 10, Williams et al. teaches a method for media repair of a storage device, comprising:

performing a read operation on the storage device (*paragraphs [0013], [0014], and [0056]*);

detecting a signature (*paragraphs [0013], [0014], and [0056], where an ECC is interpreted as a signature*); and

performing a write operation on the storage device (*paragraphs [0013], [0014], and [0056]*).

However, Williams et al. fails to teach of the write operation being performed with counter and date information. Watanabe teaches of a write operation with counter and date information (*Figs. 12 and 15; column 21 lines 25-47, where hard disk 105 stores the contents of information in Figure 15, which includes counter and date information*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included counter and date information with a write operation as taught by Williams et al. in the invention of Watanabe et al. This would have been obvious because Watanabe enhances the reliability of the system of Williams et al. by extending the fault tolerance to communication of data to storage, before the data reaches storage itself.

As in claim 12, Williams et al. teaches the read operation is a READ LONG operation (*paragraphs [0013], [0014], and [0056]*).

As in claim 13, Williams et al. teaches the write operation is a WRITE LONG operation (*paragraphs [0013], [0014], and [0056]*).

As in claim 14, Williams et al. teaches the WRITE LONG operation produces invalid ECC data (*paragraph [0008]*).

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As in claim 18, Williams et al. teaches the storage device is a non-RAID configuration (*entirety of Specification*).

\* \* \*

8. Claims 10, 11, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humlicek et al. (U.S. Patent No. 6,944,791 B2) in view of Watanabe.

As in claim 10, Humlicek et al. teaches a method for media repair of a storage device, comprising:

performing a read operation on the storage device (*column 5 line 40 through column 6 line 11*);

detecting a signature (*column 5 line 40 through column 6 line 11, where an ECC is interpreted as a signature*); and

performing a write operation on the storage device (*column 5 line 40 through column 6 line 11*).

However, Humlicek et al. fails to teach of the write operation being performed with counter and date information. Watanabe teaches of a write operation with counter and date information (*Figs. 12 and 15; column 21 lines 25-47, where hard disk 105 stores the contents of information in Figure 15, which includes counter and date information*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included counter and date information with a write operation as taught by

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Humlicek et al. in the invention of Watanabe et al. This would have been obvious because Watanabe enhances the reliability of the system of Humlicek et al. by extending the fault tolerance to communication of data to storage, before the data reaches storage itself.

As in claim 11, Humlicek et al. teaches the storage device is a non-redundant RAID configuration (*entirety of Specification*).

As in claim 13, Humlicek et al. teaches the write operation is a WRITE LONG operation (*column 5 line 40 through column 6 line 11*).

As in claim 14, Humlicek et al. teaches the WRITE LONG operation produces invalid ECC data (*column 5 line 40 through column 6 line 11*).

As in claim 15, Humlicek et al. teaches the storage device is a SCSI device (*column 6 lines 9-11*).

\* \* \*

9. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. in view of Watanabe, further in view of George.

As in claims 16 and 17, the combined invention of Williams et al. and Watanabe teaches of a storage device. However, the combined invention of Williams et al. and Watanabe fails to teach of an ATA or IDE storage device. George teaches of an ATA and IDE storage device (*column 6 lines 3-5*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included the storage device types as taught by George in the combined invention of Williams et al. and Watanabe. This would have been obvious because the invention of George teaches of determining an error in a SCSI-compatible storage device similar to that as taught by the combined invention of Williams et al. and Watanabe while reassigning and mapping defective disk areas in order to increase the integrity of stored data (*column 2 lines 1-23*).

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Contino whose telephone number is (571) 272-3657. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PFC  
3/3/2007

  
**SCOTT BADERMAN**  
SUPERVISORY PATENT EXAMINER